

THE *AUSTRINA* GROUP OF THE GENUS *MICROVELIA* (HEMIPTERA; VELIIDAE)

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ABSTRACT.— Six new species of *Microvelia* are described from North and Central America: *depressus*, *glabrosulcata*, *leavipleura*, *paura*, *psilonota*, and *reflexus*. These species are compared to *Microvelia austrina* Bueno, and the *austrina* group is designated to hold them. The habitats and phoresy of the group are discussed.

Microvelia austrina Bueno is a widespread species, occurring from the southeastern United States into Central Mexico. No closely related species have been previously described. Through extensive collecting from the United States to Panama, I have been able to secure series of *Microvelia* containing a complex of closely related species which I here designate as the *austrina* group.

In the *austrina* group the males offer little in the way of diagnostic characters, but the apterous females exhibit various modifications to facilitate the males' riding astride or "piggyback," and these features provide excellent specific characters. Many of the small microvelias exhibit such modifications in the female, but they have rarely been used as key characters (Polhemus, 1970). The late Carl Drake described many *Microvelia*, including some with obvious female modification, but did not use the character in discrimination, which may explain why several of the species described below stand in his collection under *M. austrina*. (Loans from the Drake collection are not permitted, so those specimens are not included in this study).

All of the species of the *austrina* group are found in cryptic habitats during daylight hours as they are apparently strongly negatively phototropic. Only once were members of this group observed running on open water; this was in the early morning in canopy jungle, where *M. paura* n. sp. could be seen in the dim light as dark specks moving slowly over a pool in the small stream. The most successful method of collecting is violent sweeping and splashing in dark caverns or under overhanging banks adjoining slow clear water streams. Many specimens collected were paired even after being dashed about, but no mating pairs were observed; Esaki (1937) noted a similar phoresy in *M. notophora* Esaki.

The modifications to facilitate the male's riding "piggyback" would seem to serve two purposes. First, a male would be readily available at the time of mating; second, the specialized modification exhibited by each species would be a premating reproductive isolating mechanism. At this time it is not known whether or not there are strong postmating reproductive isolating mechanisms in the group, but several species are sympatric, and as Littlejohn (1969) has pointed out, premating isolation would permit the most efficient use of gametes.

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The *austrina* group will be described first, giving the generalized characters; the species descriptions will follow, providing additional detail and key characters. For all measurements 60 units equals 1 mm. Females are intentionally named as holotypes: those types being retained in the Polhemus collection are irrevocably committed to later placement in a designated type repository.

Much of the material reported here is in the Polhemus collection (JTP). Most of the remaining specimens belong to the University of Colorado Museum (CU), and I am indebted to Dr. Peter Robinson for the opportunity to study them. The latter were collected by Martin S. Polhemus and myself during a Mexican Expedition partly financed by a grant from the University of Colorado. I am indebted to the late Robert L. Usinger for permitting me to study specimens from the University of California at Berkeley (UCB), to the late Jean L. Lafoon for the exchange specimens from the Iowa State University Collection, to Harold C. Chapman for the gift of specimens from his collection, and to Peter D. Ashlock for the loan of recently collected specimens from the University of Kansas (KU).

Microvelia austrina Group

DESCRIPTION.— Small (1.2 to 2.2 mm), stout (see Figs. 1, 2). Head short, broad, recessed into anterior margin of pronotum; ground color blackish brown with fine greyish pubescence. Pronotum long, covering mesonotum. Legs short, stout. Antenna short, stout, fourth segment fusiform. Hemelytral markings and veins inconspicuous. Body of male somewhat depressed dorsoventrally.

Male parameres small, inconspicuous; male genital segment not prominent (Fig. 1E, F). Male foretibial comb prominent, extending beyond distal end of tibia.

Key to the *Microvelia austrina* Group

1. Humeri depressed in both sexes *depressus* n. sp.
 Humeri not depressed 2
2. Anterior lobe of pronotum with transverse orange brown band extending laterally onto episternum; body length at least 1.95 mm in male, 2.15 mm in female *reflexus* n. sp.
 Anterior lobe of pronotum with shorter transverse orange brown band, usually not extending past lateral margins; if transverse band extends onto episternum (*paura*), then body length not more than 1.3 mm in male, 1.75 mm in female 3
3. Distal segment of middle tarsi either shorter or longer than proximal segment by about 20 percent; coxae yellowish or dark brown 4
 Distal segment of middle tarsi subequal to proximal segment; coxae yellowish 5

4. Distal segment of middle tarsi longer than proximal segment (7:9); coxae dark brown *glabrosulcuta* n. sp.
 Distal segment of middle tarsi shorter than proximal segment (11:9); coxae yellowish *paura* n. sp.
5. Proepisternum yellowish or light orange brown with very obvious but tiny black conical setae *psilonota* n. sp.
 Venter unicolorous or proepisternum dark orange brown; proepisternum not light colored and black conical setae not obvious 6
6. Posterior acetabula with glabrous area *laevepleura* n. sp.
 Posterior acetabula without glabrous area *austrina* Bueno

Microvelia austrina Bueno 1924

Microvelia austrina Bueno 1924. Bull. Brooklyn Ent. Soc. 19(5):191 (North Carolina)

Drake and Hussey (1955) gave the distribution of this species as Indiana, Maryland, Mississippi, North Carolina, Tennessee, Virginia, and Mexico.

DESCRIPTION.— Female body shape elongate, quite similar to

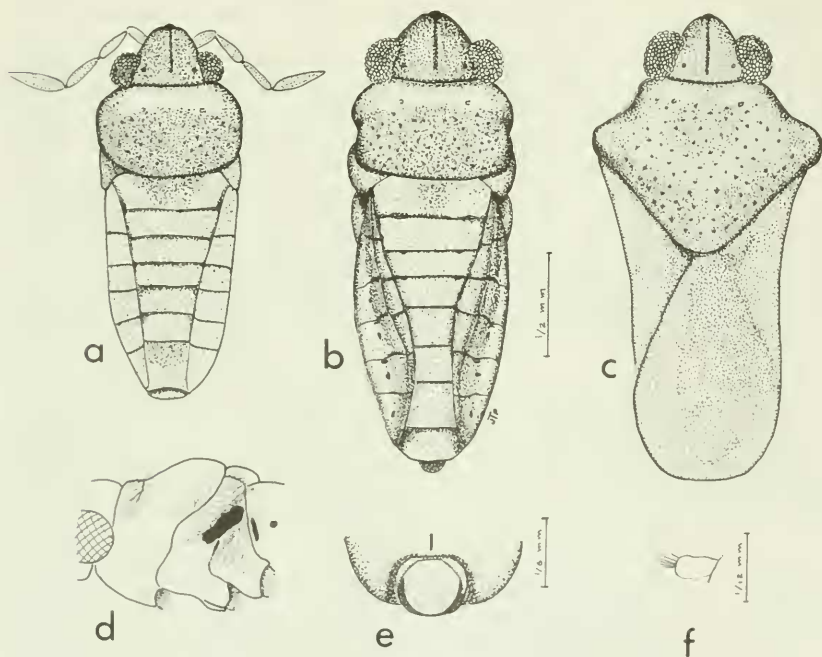


Fig. 1. *Microvelia laevipectra* n. sp.: a, Apterous male; b, Apterous female; c, Macropterous female; d, Pronotum and pleura, apterous female, side view; e, Genital segments, male; f, Male paramere.

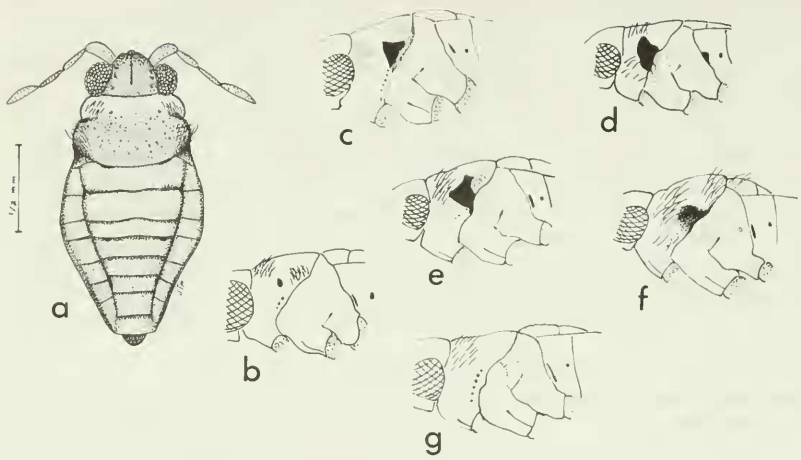


Fig. 2. *Microvelia* spp.: a. *paura* n. sp., apterous female; b-g. Pronotum and pleura. apterous females, side view; b, *paura* n. sp.; c. *depressus* n. sp.; d, *psilonota* n. sp.; e, *glabrosulcata* n. sp., f, *reflexus* n. sp., g, *austrina* Bueno.

Figure 1B; male body shape elongate, tapering caudad, very similar to Figure 1A.

Anterior lobe of pronotum with yellowish to dark orange brown band, continuous or weakly interrupted on midline, extending almost to lateral margins in some females, shorter and darker in males. Anterior lobe of pronotum, humeri, and pleura of apterous female with long stiff setae (Fig. 2G); alate females with a patch of stiff setae on anterolateral margins of pronotum: apterous and alate males with shorter scattered setae on pronotum and elytra. Apterous female without glabrous areas on pronotum or pleura, but with semi-glabrous depressed area on propleura and mesopleura.

Connexiva slightly raised in male, almost flat to vertical in apterous females. Dorsum of abdomen covered with short inconspicuous pubescence.

Venter uniformly dark, except dark orange brown next to eyes on proepisternum, anterior and middle acetabula: venter of abdomen with semilong decumbent setae in female, shorter in male. Rostrum basally, coxae, trochanters, femora basally and legs beneath yellowish to testaceous, remainder of extremities brown. Legs with the following proportions (apterous female plesiotype):

	Femur	Tibia	Tarsal 1	Tarsal 2
Anterior	28	20	13	—
Middle	32	26	13	13
Posterior	33	36	8	12

Antennal proportions I; II; III; IV: 9; 10; 12; 14.

Body measurements:

Mean length of 10 apterous ♂♂ : 1.59 mm (max. 1.70, min. 1.47).

Mean width of 10 apterous ♂♂ : 0.60 mm (max. 0.68, min. 0.55).

Mean length of 10 apterous ♀♀ : 1.87 mm (max. 2.00, min. 1.80).

Mean width of 10 apterous ♀♀ : 0.74 mm (max. 0.80, min. 0.70).

Plesiotype: Length 1.88 mm, width 0.72 mm (apterous ♀).

MATERIAL EXAMINED.—MEXICO: SAN LUIS POTOSI; 1 ♂ apterous, 25 ♂♂, 23 ♀♀ macropterous, Ciudad del Maiz. CL528, 9-I-1971, J. T. & M.S. Polhemus (JTP). VERACRUZ; 1 ♂, 1 ♀ apterous, 8 ♂♂, 2 ♀♀ macropterous, Tantoyuca, CL523, 8-I-1971, J. T. & M. S. Polhemus (JTP). UNITED STATES; GEORGIA; Calhoun, 8-VIII-1958, H. C. Chapman, 22 ♂♂, 17 ♀♀, all apterous (JTP). TENNESSEE; Knoxville, 27-VI-1891 to 2-VII-1891, H. E. Summers Collection, 1 ♂, 4 ♀♀, all macropterous (JTP).

DISCUSSION.—The description of *austrina* by Torre-Bueno (1924) is quite adequate but is given here for consistency. Curiously, Torre-Bueno chose a female for the type of *austrina*, but undoubtedly with a different motivation than mine in describing additional members of the group.

Austrina can be separated from the other group species by the key characters and by the small degree of modification in the apterous female.

Microvelia depressus, n. sp.

Female body shape elongate oval, widest across metapleura; male body shape similar to female but slightly narrower.

Anterior lobe of pronotum with orange brown band reaching inner margin of eyes, often weakly interrupted medially. Female pronotum with two groups of stiff but slender, long setae, most noticeable from side (Fig. 2C); male with shorter scattered setae; humeri depressed in both sexes, pronotum narrowed laterally, and entire dorsum depressed below level of first visible abdominal tergite; female with glabrous area on lateral margin.

Connexiva moderately raised in males, usually vertical in females or reflexed over last three tergites.

Venter uniformly dark except small brown spot on proepisternum cephalad of anterior coxae; jugum of head and entire venter covered with minute black conical setae, most noticeable on brown area of proepisternum. Legs, rostrum, and antennae brown; basal part of femora and trochanters yellowish. Posterior acetabula with glabrous spot. Legs with following proportions:

	Femur	Tibia	Tarsal 1	Tarsal 2
Anterior	21	17	10	—
Middle	27	22	8	11
Posterior	30	30	5	8

Antennal proportions I; II; III; IV: 10; 8; 7; 13.

Body measurements:

Mean length of 9 apterous ♂♂ : 1.74 mm (max. 1.78, min. 1.53).

Mean width of 9 apterous ♂♂ : 0.75 mm (max. 0.77, min. 0.72).

Mean length of 10 apterous ♀♀ : 1.67 mm (max. 1.72, min. 1.60).

Mean width of 10 apterous ♀♀ : 0.78 mm (max. 0.80, min. 0.73).

Holotype: Length 1.67 mm, width 0.78 mm.

MATERIAL EXAMINED.—Holotype, apterous ♀, 10 mi. N Chapala, Jalisco, Mexico, 22-IV-1964, J. T. & M. S. Polhemus (CU). Paratypes as follows;

MEXICO: JALISCO; 9 ♂♂, 18 ♀♀ apterous, 10 mi. N Chapala, 22-IV-1964, J. T. & M. S. Polhemus (CU, JTP).

DISCUSSION.— The strongly depressed humeri in both sexes are characteristic of this species and set it off from the remainder of the group.

Microvelia glabrosulcata, n. sp.

Female body shape elongate, abdomen slightly wider than thorax, not as robust as *psilonota*; male body shape elongate, tapering caudad, similar to Figure 1A.

Anterior lobe of pronotum with orange brown uninterrupted band reaching inner eye margin, rarely beyond. Anterior lobe of alate and apterous females with long stiff setae, apterous females also with stiff setae on humeri directed cephalad (Fig. 2E), thinner long setae on propleura of females; males with shorter scattered setae, not prominent. Apterous and alate females with a shallow glabrous sulcus on lateral margin of pronotum cephalad of humeri.

Connexiva almost flat in males and some females, strongly raised in most females, rarely almost vertical.

Venter uniformly dark, except proepisternum dark grey brown; entire venter set with minute black conical setae, most noticeable on episternum. Legs, rostrum, and antennae brown, anterior femora lighter beneath. Acetabula with prominent glabrous areas. Legs with following proportions:

	Femora	Tibia	Tarsal 1	Tarsal 2
Anterior	24	17	10	—
Middle	25	22	7	9
Posterior	26	26	6	9

Antennal proportions I; II; III; IV: 8; 7; 6; 10.

Body measurements:

Mean length of 10 apterous ♂♂ : 1.34 mm (max. 1.38, min. 1.28).

Mean width of 10 apterous ♂♂ : 0.58 mm (max. 0.60, min. 0.55).

Mean length of 10 apterous ♀♀ : 1.66 mm (max. 1.72, min. 1.58).

Mean width of 10 apterous ♀♀ : 0.79 mm (max. 0.82, min. 0.72).

Holotype: Length 1.62 mm, width 0.73 mm.

MATERIAL EXAMINED.— Holotype, apterous ♀, Ciudad del Maiz, San Luis Potosi, Mexico, 9-I-1971, CL528, J. T. & M. S. Polhemus (in Polhemus Collection). Paratypes as follows; MEXICO: SAN LUIS POTOSI; 10 ♂♂, 22 ♀♀ apterous, 14 ♂♂, 21 ♀♀ macropterous, Ciudad del Maiz, 9-I-1971, CL528, J. T. & M. S. Polhemus (JTP). JALISCO; 1 ♂, 1 ♀ apterous, 10 mi. N Chapala, 22-IV-1964, CL1031, J. T. & M. S. Polhemus (CU). UNITED STATES: ARIZONA; 2 ♂♂, 11 ♀♀ apterous, 1 ♀ macropterous, Superior, 7-X-1964, CL313, J. T. Polhemus (JTP); 3 ♂♂, 7 ♀♀ apterous, Sabino Canyon, 27-XI-1970, CL497, J. T. Polhemus (JTP).

DISCUSSION.— This species is widely distributed, but its known range is restricted to northern Mexico and Arizona. At Ciudad del Maiz, San Luis Potosi, it was taken with *austrina*.

The glabrous sulcus on the female pronotum, the dark coxae, and the long distal segment of the middle tarsi are diagnostic. The body shape is compact and somewhat resembles *depressus*.

Microvelia leavipleura, n. sp.

Female body shape elongate (Fig. 1B); male body shape elongate, tapering caudad (Fig. 1A).

Anterior lobe of pronotum with yellowish to dark orange brown band, continuous or weakly interrupted on mid-line, not extending to lateral margins. Anterior lobe of pronotum, humeri, and pleura of apterous female with long stiff setae (Fig. 1D); anterior lobe of pronotum and corium of hemelytra in alate female with long stiff setae; apterous and alate males with shorter scattered setae on pronotum and elytra. Apterous female with a glabrous sulcus on the metapleura (Fig. 1D); alate female with shallow sulcus in same position, not glabrous.

Connexiva slightly raised in male, reflexed over abdomen in female. Dorsum of abdomen covered with semilong decumbent setae, shorter in male.

Venter uniformly dark, covered with semilong decumbent setae in female, much shorter in male. Femora yellowish basally and beneath, remainder of femora and tibia deep brown. Coxae, trochanters, and beak yellowish, antennae deep brown. Legs with the following proportions (holotype):

	Femur	Tibia	Tarsal 1	Tarsal 2
Anterior	39	27	14	—
Middle	40	33	13	13
Posterior	42	42	10	13

Antennal proportions I; II; III; IV: 12; 15; 14; 17.

Body measurements:

Mean length of 10 apterous ♂♂ : 1.77 mm (max. 1.80, min. 1.72).

Mean width of 10 apterous ♂♂ : 0.68 mm (max. 0.70, min. 0.67).

Mean length of 10 apterous ♀♀ : 2.17 mm (max. 2.38, min. 2.05).

Mean width of 10 apterous ♀♀ : 0.78 mm (max. 0.83, min. 0.72).

Holotype: Length 2.20 mm, width 0.83 mm.

Genital segment and paramere of male as in Figure 1E and F respectively.

MATERIAL EXAMINED.— Holotype, apterous ♀, Rincon Chamula, Chis., Mexico, 6-I-1974, CL671, J. T. Polhemus (in Polhemus Collection). Paratypes as follows; MEXICO: CHIAPAS; 21 ♂♂, 17 ♀♀ apterous, Rincon Chamula, CL671, 6-I-1974, J. T. Polhemus (JTP); 13 ♂♂, 13 ♀♀ apterous, 2 ♂♂, 3 ♀♀ macropterous, 1 nymph, 12 mi. N Bochil, CL1091, 4 May 1964, J. T. and M. S. Polhemus (CU).

DISCUSSION.— This is the only member of the group in which the apterous female has an obvious glabrous sulcus on the metapleura. In general body shape, *leavipleura* resembles *austrina*, but the glabrous area on the posterior acetabula, lacking in *austrina*, will separate them.

The collections of this species were made over a rather restricted area in northern Chiapas.

Microvelia paura, n. sp.

Female body shape robust (Fig. 2A); male body shape similar to figure 1A.

Anterior lobe of pronotum with orange brown band extending

to lateral margins in females, evanescent laterally in males; episternum orange brown. Dense area of bristly setae on each humerus of apterous females (Figs. 2A, B), absent in alate female; bristly setae sparsely set laterally on anterior pronotal lobe; males without long hairs on pronotum. Small glabrous spot, sometimes absent, on lateral margin of pronotum of apterous female (Figs. 2A, B); metapleura with a shallow transverse, faintly shining depression. Elongate glabrous area on pronotum in a shallow transverse sulcus cephalad of humeri, reaching lateral margin, and irregular glabrous spot on mesopleura of alate female.

Connexiva slightly raised, sometimes almost vertical in female. Dorsum of abdomen covered with semilong decumbent setae, shorter in male.

Venter uniformly dark except episternum; thickly set with minute black conical setae, sparser posteriorly, very noticeable on episternum. Femora yellowish, tibia yellow brown, knees embrowned in females; males slightly darker. Legs with following proportions (holotype):

	Femur	Tibia	Tarsal 1	Tarsal 2
Anterior	25	19	10	—
Middle	26	21	11	9
Posterior	30	30	7	9

Antennal proportions I; II; III; IV: 9; 10; 9; 12.

Body measurements:

Mean length of 7 apterous ♂♂ : 1.11 mm (max. 1.14, min. 1.07).

Mean width of 7 apterous ♂♂ : 0.44 mm (max. 0.44, min. 0.43).

Mean length of 10 apterous ♀♀ : 1.63 mm (max. 1.72, min. 1.57).

Mean width of 10 apterous ♀♀ : 0.74 mm (max. 0.83, min. 0.68).

Holotype: Length 1.58 mm, width 0.68 mm.

MATERIAL EXAMINED.— Holotype, apterous ♀, Palenque, Chis., Mexico, 13-XII-1973, CL608, J. T. Polhemus (in Polhemus Collection). Paratypes as follows; EL SALVADOR: 3 ♂♂, 13 ♀♀ apterous, 11 ♂♂, 33 ♀♀ macropterous, La Majadita, CL1256. 12-XII-1970, J. T. Polhemus (JTP). MEXICO: CHIAPAS: 5 ♂♂, 10 ♀♀ apterous, 4 ♂♂, 2 ♀♀ macropterous, Palenque, CL608. 13-XII-1973, J. T. Polhemus (JTP); 1 ♀ apterous, Rincon Chamula, CL671, 6-I-1974, J. T. Polhemus (JTP); 1 ♀ apterous, 2 ♂♂, 2 ♀♀ macropterous, Rizo de Oro, CL1331, 14-I-1970, J. T. Polhemus (JTP); 2 ♀♀ apterous, Simojovel, 22-VII- to 19-VIII-1958, J. A. Chermak (UCB). PANAMA: 3 ♂♂, 2 ♀♀ macropterous, Cerro Campana, 7-V-1973, P. D. Ashlock (JTP, KU).

DISCUSSION.— The female body shape in *paura* is quite robust, and the transverse orange brown band on the anterior lobe of the pronotum reaches the lateral margins or extends onto the propleura; these characteristics give the females a rather distinctive appearance. The males, on the other hand, are very difficult to separate from the other species. The dense field of minute black conical setae on the venter, the orange brown episternum, and the long proximal segment of the middle tarsi are helpful.

Paura occurs throughout Central America.

Microvelia psilonota, n. sp.

Female body shape robust, similar to *paura* (Fig. 2A); male body shape elongate, tapering caudad, similar to Figure 1A.

Anterior lobe of pronotum with uninterrupted light to dark orange brown band not reaching lateral margins, rarely extending laterally to behind middle of eye. Anterior lobe of pronotum and propleura of alate and apterous females with long stiff setae (Fig. 2D); apterous and alate males with shorter scattered setae, not prominent. Apterous and alate females with a shallow glabrous sulcus of somewhat variable shape on lateral margin of pronotum (Fig. 2D). Pronotal disc of apterous female broadly feebly depressed.

Connexiva almost flat to feebly raised in males and most females, strongly raised and almost vertical in some females.

Venter uniformly dark, except proepisternum light orange brown; jugum of head, inner portion of anterior coxae, proepisternum behind eyes, lateral margins of metapleura and abdominal ventrites above spiracles with a field of minute black conical setae. Legs yellowish, embrowned dorsally on tarsi, tibia, and distal part of femora. Acetabula brown, posterior acetabula with glabrous area. Trochanters, coxae, rostrum and ventral part of first three antennal segments yellowish to yellowish brown; remainder of antennae brown. Legs with following proportions (holotype):

	Femora	Tibia	Tarsal 1	Tarsal 2
Anterior	23	18	11	—
Middle	24	21	9	9
Posterior	25	27	5	8

Antennal proportions I; II; III; IV: 8; 10; 7; 12.

Body measurements:

Mean length of 10 apterous ♂♂ : 1.28 mm (max. 1.32, min. 1.21).

Mean width of 10 apterous ♂♂ : 0.53 mm (max. 0.55, min. 0.52).

Mean length of 10 apterous ♀♀ : 1.70 mm (max. 1.77, min. 1.62).

Mean width of 10 apterous ♀♀ : 0.89 mm (max. 0.95, min. 0.80).

Mean length of 10 alate ♂♂ : 1.55 mm (max. 1.62, min. 1.50).

Mean width of 10 alate ♂♂ : 0.72 mm (max. 0.75, min. 0.70).

Mean length of 10 alate ♀♀ : 1.85 mm (max. 1.95, min. 1.72).

Mean width of 10 alate ♀♀ : 0.87 mm (max. 0.95, min. 0.83).

Holotype: Length 1.62 mm, width 0.83 mm.

MATERIAL EXAMINED.—Holotype, apterous ♀. 20 mi. SE Acatlan, Puebla, Mexico. 16-XII-1969, CL1243, J. T. Polhemus (in Polhemus Collection). Paratypes as follows: MEXICO: PUEBLA; 6 ♂♂, 15 ♀♀ apterous, 13 ♂♂, 15 ♀♀ macropterous, 20 mi. SE Acatlan. 16-XII-1969, CL1243, J. T. Polhemus (JTP); 27 ♂♂, 33 ♀♀, 3 nymphs apterous, 4 ♂♂, 2 ♀♀ macropterous, same place, 28-IV-1964, J. T. & M. S. Polhemus (CU, JTP); 1 ♂ macropterous, Izucar de Matamoros, 27-IV-1964, CL1050, J. T. & M. S. Polhemus (CU). DURANGO; 1 ♂ macropterous, La Palmita, 20-IV-1964, CL1018, J. T. & M. S. Polhemus (CU). SINALOA; 2 ♀♀ macropterous, Santa Lucia, 20-IV-1964, CL1019, J. T. & M. S. Polhemus (CU, JTP).

DISCUSSION.—The robust body shape, nature of the glabrous pronotal sulcus, and setae pattern make separation of *psilonota* females a simple matter, but the males are very difficult to separate. The combination of body size, yellowish proepisternum with the field of tiny conical black setae, and subequal middle tarsal segments are helpful, but for certain identification, associated females are desirable.

Microvelia reflexus, n. sp.

Female body shape elongate, similar to Figure 1B. Male body shape elongate, similar to Figure 1A, but with pronotum narrower than metanotum and lateral margins sinuate.

Anterior lobe of pronotum with orange brown band extending laterally onto episternum in both sexes. Sparsely set areas of long setae on anterior lobe of pronotum, humeri, and metanotum of apterous female (Fig. 2F); anterior lobe of pronotum and corium of hemelytra with similar setae in alate female; apterous and alate males with much shorter pubescence. Lateral pronotal margin of apterous female with a depressed area, feebly shining but not glabrous (Fig. 1F), absent in alate female.

Connexiva raised in male, but not vertical; vertical in female, abruptly reflexed over abdominal tergite 4 then diverging posteriorly and less strongly reflexed on segments 5 and 6, strongly hirsute on segment 6. Abdominal dorsum clothed with very fine pubescence; female with long decumbent setae on last abdominal tergite.

Venter uniformly dark, except episternum and genital segments orange brown; episternum thickly set with minute conical black setae and a few long setae. Male with last ventrite depressed, forming a broad transverse sulcus. Legs yellowish, embrowned dorsally on tibia, tarsi, and distal part of femora. Coxae, trochanters, beak, and ventral part of first antennal segment yellowish; remainder of antennae brown. Legs with following proportions (holotype):

	Femur	Tibia	Tarsal 1	Tarsal 2
Anterior	29	20	12	—
Middle	32	27	12	12
Posterior	35	38	7	10

Antennal proportions I; II; III; IV: 10; 10; 10; 14.

Body measurements:

Apterous male, length 1.95 mm, width 0.78 mm.

Macropterous male, length 2.14 mm, width 0.88 mm.

Apterous female (holotype), length 2.15 mm, width 0.88 mm.

Macropterous female, length 2.22 mm, width 0.97 mm.

MATERIAL EXAMINED.— Holotype, apterous ♀, San Vito de Java, Costa Rica, CL1287, 30-XII-1968, J. T. Polhemus (in Polhemus Collection). Paratypes, same data as holotype, 2 ♂♂ apterous, 4 ♂♂, 2 ♀♀ macropterous.

DISCUSSION.— The relatively larger size and the transverse orange brown band on the anterior lobe of the pronotum, extending onto the episternum, set *reflexus* apart from other members of the group.

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